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G01N 21/85, 21/15

[BE/BE]; Bierbeekstraat 103, B-3360 Korbeek-Lo (BE).  
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KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
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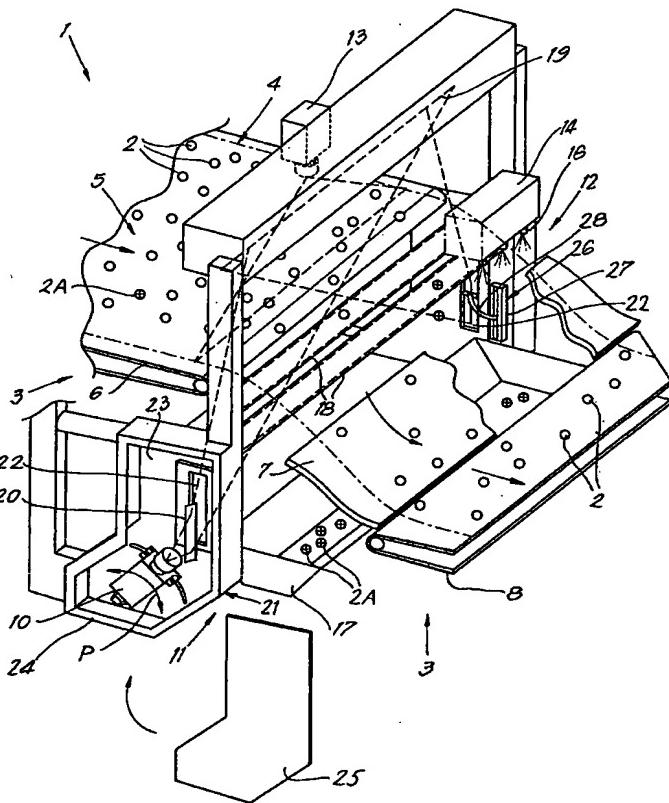
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(54) Title: METHOD AND DEVICE FOR INSPECTING PRODUCTS





GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

- *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**10/549757**

JCG5 Rec'd PCT/PTO 19 SEP 2009

**COURTESY COPY OF THE  
INTERNATIONAL  
PRELIMINARY EXAMINATION  
REPORT**

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0-2264	<b>FOR FURTHER ACTION</b>	
See Form PCT/PEA416		
International application No. PCT/BE2004/000040	International filing date ( <i>day/month/year</i> ) 18.03.2004	Priority date ( <i>day/month/year</i> ) 18.03.2003
International Patent Classification (IPC) or national classification and IPC B07C5/342, G01N21/85, G01N21/15		
<p><b>Applicant</b>  <b>PULSARR INDUSTRIAL RESEARCH B.V. et al.</b></p>		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> <i>(sent to the applicant and to the International Bureau)</i> a total of sheets, as follows:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>		
Date of submission of the demand  15.10.2004	Date of completion of this report  04.02.2005	
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Verdoodt, E Telephone No. +31 70 340-3577	
		

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/BE2004/000040

**10/549757**

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-24 as originally filed

**Drawings, Sheets**

1/5-5/5 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/BE2004/000040

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	4-7,11-16
	No:	Claims	1-3,8-10,17-24
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-24
Industrial applicability (IA)	Yes:	Claims	1-24
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.  
**PCT/BE2004/000040**

**Re Item V.**

- 1 The following document is referred to in this communication:  
D1: EP-A-0 396 290 (RADIX SYSTEMS LTD) 7 November 1990 (1990-11-07)  
D2: WO 00/58035 A (CAMPBELL DUNCAN B ;LEIDECKER CLIFF J (US);  
HOFFMAN TODD E (US); SQ) 5 October 2000 (2000-10-05)  
D3: US-A-4 473 279 (SAKAKI HIDEKI) 25 September 1984 (1984-09-25)  
D4: US-A-5 954 206 (MALLON JOHN ET AL) 21 September 1999 (1999-09-21)

**2 INDEPENDENT CLAIM 1**

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.  
Document D1 discloses (the references in parenthesis applying to this document):
- 2.2 Device for the inspection of products, whereby this device comprises means to convey (col.3, line 57-col.4, line 2) these products over a track (11) in the shape of a product flow extending in the width (see figures 5B and 6), characterised in that it comprises at least one scanner (14) (Col. 3, lines 44-51; col. 1, lines 42-51) to inspect the products, whereby this scanner is situated on one side of the aforesaid track (11) (see figure 5B).
- 2.3 Document D1 shows four cameras positioned alongside the track. The words "on one side of the track" as in claim 1, could however also be interpreted as to mean the upper and lower side of the track. In case this interpretation is used, many more documents would fall in the scope of claim 1. (reference is made to the Search Report drawn up for the application)  
It is however clear from the drawings and description (Page 2, lines 6-8; page 4, lines 19-21; page 8, lines 11-13), as well as dependent claim 3, that in this case it is meant that the scanners are positioned along side the track.

**3 INDEPENDENT CLAIM 17**

- 3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 17 is not new in the sense of Article 33(2) PCT.  
Document D1 discloses (the references in parenthesis applying to this document): Method for the inspection of products, whereby these products are conveyed along a track (11) in the shape of a product flow extending in the width and whereby these products are scanned, characterised in that at least one scanner (14) is applied which is situated on one side of the aforesaid track (11).

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.  
**PCT/BE2004/000040**

**4 DEPENDENT CLAIMS 2-16, 18-24**

- 4.1 Dependent claims 2-16, 18-24 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).
- 4.2 Claims 2 and 3: D1 shows four scanners situated on either side of the track, two of which scan the products of the lower side, in a slanting direction, while they are entirely beside the track.
- 4.3 Claim 4: D2 shows a scanner (90) erected according to a vertical plane with its longitudinal direction along the side of the track.
- 4.4 Claim 5: D2 shows a bending mirror (96).
- 4.5 Claim 6: D2 shows mirrors whose angle can be set (page 10, lines 6-7)
- 4.6 Claim 7: D2 shows a screen (figure 2) and a cleaning device (114). D3 shows also a wiper (16).
- 4.7 Claim 8: D1 uses a conveyor belt (11), from which the products fall to be scanned in free fall.
- 
- 4.8 Claim 9: D1 shows even four cameras as scanners. Document D4 also shows the arrangement of three cameras, each one of which covers a 120° sector, so all three assure a full 360° inspection of a product. (See figure 7 and 8 and col. 10, lines 26-33)
- 4.9 Claim 10: D1 also shows a pneumatic sorting unit, driven by a control unit.
- 4.10 Claims 11 and 12: D2 can be read against the wording of claim 11, even though the window (102) is positioned almost horizontally: the side of the window directed towards the product flow is parallel, so at an angle less than 90°, to a horizontal plane extending as of the lower edge, that is the lower side, of the window.
- 4.11 Claim 13: Document D3 also shows a window (8) which extends almost vertically.
- 4.12 Claims 14 and 16: D2 shows a blowing device (114) to create an air flow in the shape of a curtain, along the side of the window directed towards the product flow. (page 12, lines 1-5)
- 4.13 Claim 15: The window in D2 is also sealed by light transmitting material.
- 4.14 Claims 18,20,22,23: All features can be found in D1 (See also respectively 4.2, 4.8 and 4.9 above)
- 4.15 Claim 19: D1 shows (see figure 5B) the scanners scanning the entire product flow.
- 4.16 Claim 21: D1 shows the scanning as the products perform a coasting flight motion.
- 4.17 Claim 24: D1 shows four sides at which the products are scanned. D4 shows three sides rotated at 120° in relation to each other (See figure 7 and 8 and col. 10, lines 26-33).

# INTERNATIONAL SEARCH REPORT

In tional Application No  
PCT/BE2004/000040

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B07C5/342 G01N21/85 G01N21/15

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B07C G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 396 290 A (RADIX SYSTEMS LTD) 7 November 1990 (1990-11-07)  column 3, line 40 - line 51 column 3, line 57 - line 10 column 4, line 19 - line 21 figures 5A,5B,6  US 5 954 206 A (MALLON JOHN ET AL) 21 September 1999 (1999-09-21)  column 10, line 26 - line 33 figures 6,7  -----	1-3, 8-10, 17-24
X	 -----	1,3,10, 17-19, 21,23,24

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the International search

22 July 2004

Date of mailing of the International search report

04/08/2004

Name and mailing address of the ISA

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Authorized officer

Verdocht, E

## INTERNATIONAL SEARCH REPORT

In      tional Application No  
PCT/BE2004/000040

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 281 933 A (HOUSTON ROBERT K ET AL) 4 August 1981 (1981-08-04)  figures 1-3	1,3, 8-10, 17-19, 22,23
X	WO 00/58035 A (CAMPBELL DUNCAN B ;LEIDECKER CLIFF J (US); HOFFMAN TODD E (US); SQ) 5 October 2000 (2000-10-05)	1-12, 14-16
Y	page 10, line 6 - line 7 page 10, line 18 - line 20 page 10, line 29 - page 11, line 2 page 11, line 18 - line 25 page 12, line 1 - line 5  figure 2	13
X	US 4 738 175 A (CAVIN DENNIS ET AL) 19 April 1988 (1988-04-19) column 4, line 56 - column 5, line 6  figure 5	1,6
Y	US 4 473 279 A (SAKAKI HIDEKI) 25 September 1984 (1984-09-25)	13
A	abstract  figures 1,3	7,11,12
A	WO 00/27550 A (FOOD PROCESSING SYSTEMS ;GEUS JOHANNES CORNELIS DE (NL); PETERS RO) 18 May 2000 (2000-05-18) abstract  figure 3	7
A	PATENT ABSTRACTS OF JAPAN vol. 008, no. 202 (P-300), 14 September 1984 (1984-09-14) & JP 59 085919 A (IKEGAMI TSUUSHINKI KK), 18 May 1984 (1984-05-18) abstract	4-6

# INTERNATIONAL SEARCH REPORT

Information on patent family members

tional Application No

PCT/BE2004/000040

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0396290	A	07-11-1990	EP	0396290 A2		07-11-1990
US 5954206	A	21-09-1999	AU EP	2990795 A 0772498 A1		22-02-1996 14-05-1997
US 4281933	A	04-08-1981	AU AU BR FR GB IT JP JP JP NZ ZA	537904 B2 6624581 A 8100294 A 2473910 A1 2072835 A 1135113 B 1024550 B 1559135 C 56108579 A 196038 A 8100321 A		19-07-1984 30-07-1981 04-08-1981 24-07-1981 07-10-1981 20-08-1986 12-05-1989 16-05-1990 28-08-1981 28-02-1985 27-01-1982
WO 0058035	A	05-10-2000	AU EP TW WO US	3930000 A 1173292 A1 449508 B 0058035 A1 6646218 B1		16-10-2000 23-01-2002 11-08-2001 05-10-2000 11-11-2003
US 4738175	A	19-04-1988	US	4853533 A		01-08-1989
US 4473279	A	25-09-1984	JP JP JP AU AU CA DE EP GB KR MY PH	1052689 B 1571422 C 58017341 A 532970 B2 8187282 A 1176413 A1 3272820 D1 0061883 A1 2099141 A , B 8501052 B1 16986 A 19500 A		09-11-1989 25-07-1990 01-02-1983 20-10-1983 30-09-1982 23-10-1984 02-10-1986 06-10-1982 01-12-1982 25-07-1985 31-12-1986 14-05-1986
WO 0027550	A	18-05-2000	AU WO	1190000 A 0027550 A1		29-05-2000 18-05-2000
JP 59085919	A	18-05-1984	JP JP	1753865 C 4042611 B		23-04-1993 14-07-1992